



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,660	03/30/2004	Chien-Min Sung	22708	5907

20551 7590 12/27/2006  
THORPE NORTH & WESTERN, LLP.  
8180 SOUTH 700 EAST, SUITE 200  
SANDY, UT 84070

EXAMINER
----------

YU, GINA C

ART UNIT	PAPER NUMBER
----------	--------------

1617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/814,660

Applicant(s)

SUNG ET AL.

Examiner

Gina C. Yu

Art Unit

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Receipt is acknowledged of amendment filed on October 3, 2006. Claims 1-27 are pending. Claim rejection made under 35 U.S.C. § 112, second paragraph, as indicated in the previous Office action dated July 3, 2006, is modified to address the claim amendment made by applicants. Claim rejection made under 35 U.S.C. § 102, as indicated in the same Office action, is withdrawn in view of applicants' remarks. Claim rejection made under 35 U.S.C. § 103 (a), indicated in the same Office action, is maintained and modified to address the claim amendment made by applicants.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 2, 4, 5, 6, 25, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

In claims 2, 4, 5, 6, 25, and 26, the terms "skin cleanser" and "deodorant", and "dental filling", and "lotion" render the claims vague and indefinite because the claims do not clearly set forth the required components to make the composition a cleanser, deodorant, a dental filling, or a lotion. For example, a cleanser, deodorant, a dental filling, and lotion may comprise a common ingredients such as dispersant or emulsifier, and are not distinctive from one another. The names of these compositions denote the intended use of the compositions rather than the components that make up the each formulation.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-13 and 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies (US 4482538) in view of Raty et al.**

In claim 1, the term "remedial healthcare" also denotes the intended use or purpose of the composition rather than the structural limitation of the claimed invention. See MPEP 2111.02. Also in claims 2, 4-6, 11, and 12, the terms "skin cleanser", "deodorant", and "dental filling", "lotion" etc., refer to the intended future use of the formulations and do not render any structural limitations. Thus no patentable weights are afforded to these terms.

Davies teaches that that it is well known in cosmetic art to incorporate diamond particles in nail varnishes and polishes to provide the nails with wear-resistant coating and a sparkle. See col. 1, lines 10 – 18. To overcome the problem of maintaining the suspension of diamond particles, the reference teaches using a Bingham plastic as the liquid base. See col. 1, lines 41 – 44. Colloid silica is added to make the liquid base having Bingham plastic characteristics, which meet the limitation, "viscous biologically acceptable carrier" of instant claims 3 and 13. See col. 2, lines 40 – 53. See also col. 2, lines 15 – 39 for claims 3, and 13. The reference also teaches using abrasive diamond particles having the size of 6-12 microns in amount not exceeding 2.5 gms per 100 ml of the liquid base. See col. 2, lines 54 – 65; instant claims 7, 8, 15, 23.

Davies fails to teach diamond particles having the recited particle size range.

Raty teaches that nanodiamond having diameters of about 10 nm have ultradispersity due to their very narrow size distribution. See p. 793, 1<sup>st</sup> full par. See instant claims 8, 9, 16, and 17.

Claim 18 is a product by process claim. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case, since the prior art nanodiamond particles meet all the limitation of the claimed in the present invention, no patentable weight is given to the process by which the claimed nanodiamond particles are made.

It would have been obvious to one of ordinary skill in the art to modify the composition of Davies by substituting the diamond particles therein with nanodiamond as motivated by Raty because 1) Davies teaches the use of diamond particles in cosmetic nail polish and addresses the problem of suspending the particles in the liquid base; and 2) Raty teaches that nanodiamond have ultradispersity. The skilled artisan would have had a reasonable expectation of successfully producing a nail polish comprising nanodiamond particles which is stably dispersed in the composition.

**Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davies and Raty as applied to claims 1-13 and 15-27 above, and further in view of Flick (Cosmetics Additives, 1991).**

Davies fails to teach stearalkonium hectorite.

Flick teaches that stearalkonium hectorite is the reaction products of an organic quaternary amine with hectorite, which is used as a gelling agent for oils, solvents, or synthetic liquids. See p. 635. The reference also teaches that stearalkonium hectorite produces reproducible thixotropic viscosity, suspends pigments, pearl essence and active ingredients, controls application, reduces dripping and running, imparts good leveling, reduces syneresis, imparts heat stability, reducing high temperature running and dripping, and improves emulsion stability. See Advantages. Flick teaches that stearalkonium hectorite is used in intermediate to high polarity organic systems such as esters and triglycerides, and has application in formulating nail lacquers and antiperspirants.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the nail polish composition of the combined references by adding stearalkonium hectorite as motivated by Flick because 1) Davies teaches a nail polish; and 2) Flick teaches that the stearalkonium hectorite is a conventional rheological additive used to formulate nail lacquers which imparts reproducible thixotropic viscosity and suspends pigments, pearl essence and active ingredients. The skilled artisan would have had a reasonable expectation of successfully producing a nail polish composition with improved stability.

### ***Response to Arguments***

Applicant's arguments filed on October 3, 2006 have been fully considered but they are not persuasive in part.

Applicants' argument with respect to the anticipation rejection is viewed persuasive, and the rejection is withdrawn.

With respect to the § 112, second paragraph rejection, applicants assert that the amendment overcomes the previous rejection. Examiner maintains the rejection, as it is viewed that the terms which denote the type of the final product compositions (skin cleanser, deodorant, dental filling, lotion, etc) still do not set forth the structural limitations which would distinguish these products from one another or from prior art.

Applicants argue that the ultradispersed diamond taught in Raty is not the ultrananocrystalline diamond film. Examiner agrees with applicants' statement, but the reference also teaches that spheroidal diamond nanoparticles of about 4nm is obtained and commercially available. The rejection is not based on ground that diamond film would be added to the nail polish composition, as a film could not have particle size distribution, as applicants have also stated in Remarks. The rejections are maintained for the reasons of record, as the skilled artisan would have had a motivation to use the diamond nanoparticles of Raty in the Davies' composition in expectation of obtaining a nail polish comprising nanodiamond particles which are stably dispersed in the composition.

Applicants also argue that Davies does not teach using a dispersant in the composition and manipulates the carriers to enhance the diamond suspension. Examiner respectfully disagrees with applicant's position, which essentially is that, even in view of the teaching in Raty, a skilled artisan would not have been motivated to use the benefits of the ultradispersed diamond. Examiner views the argument is rather

Art Unit: 1617

subjective. On the other hand, the present rejection is viewed proper, since the strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983). In this case, a skilled artisan would have expected that, due to the ultradispersibility of the Raty's nanodiamond particles, the resulting composition would have enhanced dispersibility of the actives.

### **Conclusion**

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



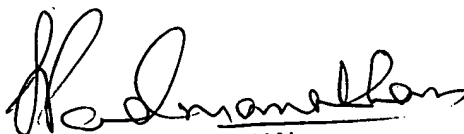
Art Unit: 1617

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gina C. Yu whose telephone number is 571-272-8605. The examiner can normally be reached on Monday through Friday, from 8:00AM until 5:30 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gina C. Yu  
Patent Examiner

  
SREENI PADMANABHAN  
SUPERVISORY PATENT EXAMINER